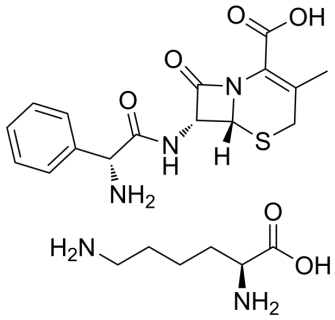
Cephalexin (lysine)

Cat. No.:	HY-B0200D
CAS No.:	53950-14-4
Molecular Formula:	$C_{22}H_{31}N_5O_6S$
Molecular Weight:	493.58
Target:	Bacterial; Antibiotic; Penicillin-binding protein (PBP)
Pathway:	Anti-infection
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Cephalexin (Cefalexin) lysine is a potent, orally active new semisynthetic cephalosporin antibiotic with a broad antibacterial spectrum. Cephalexin lysine has antibacterial activity against a wide variety of gram-positive and gram-negative bacteria. Cephalexin lysine targets penicillin-binding proteins (PBPs) to inhibit bacterial cell wall assembly. Cephalexin lysine is used for the research of pneumonia, strep throat, and bacterial endocarditis, et al[1][2].
IC_{50} & Target	β-lactam
In Vitro	Cephalexin lysine (10 μg/mL) disrupts polymer peptidoglycan (PG) biogenesis by inactivating enzymes called penicillin-binding proteins (PBPs)[1]. Cephalexin lysine inhibits a broad spectrum of grampositive and gram-negative organisms with MIC values of 2, 2, 2, 2, 4, 4.4 and 5.7 μg/mL for Bacillus anthracis, Edwardsiella taFda, Vibrio cholera, Pasteurella multocida, Edwardsiella tarda, Alcaligenes sp and Proteus rettgeri, respectively[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Cephalexin lysine (0-50 mg/kg; p.o.; for 3.5 hours) has antibacterial activity in male Swiss-Webster mice with infected bacterial[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male Swiss-Webster mice with infected bacterial[2]
Dosage:	0-50 mg/kg
Administration:	Oral administration; for 3.5 hours
Result:	Had antibacterial activity against Streptococcus pyogenes, Streptococcus pneumoniae, Staphylococcus aureus and several gram-negative species mice.

CUSTOMER VALIDATION

- Theranostics. 2022 Jan 1;12(3):1187-1203.

- Chemosphere. 2021, 131417.
- Chemosphere. 2019 Jun;225:378-387.
- J Med Chem. 2021 Sep 21.
- Infect Immun. 2018 May 22;86(6). pii: e00090-18.

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REFERENCES

[1]. Cho H, et, al. Beta-lactam antibiotics induce a lethal malfunctioning of the bacterial cell wall synthesis machinery. Cell. 2014 Dec 4;159(6):1300-11.

[2]. Buck RE, et, al. Cefadroxil, a new broad-spectrum cephalosporin. Antimicrob Agents Chemother. 1977 Feb;11(2):324-30.

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